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ABSTRACT

CLIOTUTOR is a computer-assisted instructional package of 30 tutorial lessons keyed to a standard text and operated with a VAX computer system. Western Michigan University, a member of the CLIOTUTOR consortium, operates its own copy of the program in conjunction with a redesigned two-semester freshman history course. CLIOTUTOR provides a half-hour lesson weekly for each student on questions related to assigned text material. The major goal for using CLIOTUTOR is to make students responsible for learning text material outside class, so classroom sessions can be used for audiovisual presentations, directed writing assignments, and discussion of more complex issues. A secondary goal is instructional cost-effectiveness. Two faculty members administer CLIOTUTOR for three to four sections of a freshman Western civilization course totaling 150-200 students. Some students repeat lessons as review before exams. Informal surveys, personal interviews, and faculty observation suggest that most students enjoy working with CLIOTUTOR and find it an effective way to understand and remember text material. It is particularly appreciated by students whose reading comprehension is modest or poor. Students' major complaint is limited access to the terminals. Faculty feel students understand text material better when they come to class. (MSE)

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CLIOTUTOR:

LOCAL APPLICATION OF COMPUTER-ASSISTED INSTRUCTION IN HISTORY

Internally Funded Project

Western Michigan University

Starting Date August 28, 1988

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[AASCU/ERIC MODEL PROGRAMS INVENTORY PROJECT]

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AASCU/ERIC Model Programs Inventory Project

The AASCU/ERIC Model Programs Inventory is a two-year project seeking to establish and test a model system for collecting and disseminating information on model programs at AASCU-member institutions--375 of the public four-year colleges and universities in the United States.

The four objectives of the project are:

- To increase the information on model programs available to all institutions through the ERIC system
- To encourage the use of the ERIC system by AASCU institutions
- To improve AASCU's ability to know about, and share information on, activities at member institutions, and
- To test a model for collaboration with ERIC that other national organizations might adopt.

The AASCU/ERIC Model Programs Inventory Project is funded with a grant from the Fund for the Improvement of Postsecondary Education to the American Association of State Colleges and Universities, in collaboration with the ERIC Clearinghouse on Higher Education at The George Washington University.

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PART A

ABSTRACT

CLIOTUTOR is a computer-assisted instructional package developed by David Thomas and Jeffrey Newton of Rhode Island College under grants from F.I.P.S.E. and Digital Equipment Corporation. The package consists of 30 tutorial lessons keyed to a standard text and operated via a VAX computer system. Western Michigan University, as a member of the CLIOTUTOR consortium, operates its own copy of this program in conjunction with a re-designed. two-semester freshman history course.

CLIOTUTOR provides an average half-hour recitation for each student each week on questions related to assigned text material. The major goal for using CLIOTUTOR is to make students responsible for learning text material outside of class, so that classroom sessions could be used for audio-visual presentations, directed writing assignments, and discussion of more complex issues. A secondary goal is to make teaching more cost effective in light of rapid increases in class size.

At present two history faculty administer CLIOTUTOR for three to four sections of a freshman Western Civilization course totalling 150-200 students. These numbers are expected to double in Fall 1990. Students spend about half an hour per week on the terminals, and some repeat the lessons as review before examinations.

From informal surveys, personal interviews and faculty observation it seems clear that most students enjoy working with CLIOTUTOR and find it an effective way to understand and remember the text material. It is particularly appreciated by students whose reading comprehension is modest or poor. Students' major complaint is access to the five terminals, located in the student center, which must be used for the program. Faculty feel that students understand the text material better when they arrive in class, and have redesigned the classroom experience to foster more active student participation in learning.

INTRODUCTION

A desire to redesign a traditional introductory Western Civilization course led two WMU faculty to seek ways to make students learn more textbook information outside of class. Demonstration of CLIOTUTOR at a national conference by Rhode Island College faculty was followed by an agreement to use CLIOTUTOR at Western Michigan University as part of a consortium to develop and evaluate computerized course materials.

Target population was 150-300 freshman history students. The two faculty had some previous computer experience and acquaintance with alternative methods of cognitive skills development. The operating system and courseware for CLIOTUTOR were provided by Digital Equipment Corporation as part of the Rhode Island project, and five new terminals were purchased with support from the WMU Provost's office. The WMU Computer Center staff give needed technical support to the faculty. Costs of computer time, terminals and staff time were modest in relation to the institutional benefits.

Interim results include student satisfaction with the interest and effetiveness of CLIOTUTOR; and improvement in student preparedness prior to class sessions; a much more intense involvement with assigned text material than in other freshman classes; and greater flexibility for faculty in redesigning classroom experiences. A formal evaluation of CLIOTUTOR, supported by the Fund for the Improvement of Post-Secondary Education (F.I.P.S.E.) is now under way; it should confirm the effectiveness of this program, which is easily replicated or adapted at other institutions with VAX computer equipment.

BACKGROUND

A desire to redesign a traditonal introductory history course to promote more active participation by students led two faculty to seek alternatives to lecture/discussion formats. Both had some experience with computers, and both were acquainted with examples of student participation in other courses. The general goal was to shift the responsibility for mastering textbook material to the students' shoulders outside the classroom, so that class sessions could be used for other activities. A demonstration of the partly-developed CLIOTUTOR program by professors Thomas and Newton in January 1987 led Porter and Stone to advocate joining the CLIO consortium and using the program at Western Michigan. Western's administration provided staff and equipment support for this project, which began full operation in Fall 1988.

During preparation for using CLIOTUTOR, professors Porter and Stone also met weekly to plan new activities for the classroom. A series of directed writing assignments, requiring students to analyze particular historical situations by synthesizing text material, was produced. Costumes and equipment were made for a simulated medieval knighting ceremony. Films, videotapes and slides were reviewed and organized for presentation. Porter and Stone continue to meet weekly to plan new activities and evaluate materials already prepared.

DESCRIPTION

CLIOTUTOR is a series of thirty tutorials keyed to chapters in a standard text: John P. McKay, Bennett D. Hill & John Buckler's A History of Western Society, third edition, published by Houghton Mifflin. The tutorials offer a series of multiple choice, fill-in, and open answer questions that invite students to make inferences and guesses as well as correct identification of text information. The lessons have some (not enough) graphics such as maps, time-lines, charts and pictures; they offer a few games and jokes along the way, and they provide feedback for both right and wrong answers. The lessons are not graded: the point is to interact with the text material. Students receive credit when they complete a lesson in timely fashion.

The focus of CLIOTUTOR is on mastering text material in preparation for class discussions, exercises, etc. We advise students to read the text first, outline it or summarize it (a one-page summary of each chapter is required, a difficult job for many students), and then proceed to the CLIOTUTOR lesson. In practice, many students take their textbook to the terminal and read it while pursuing the computer lesson, taking notes as they go. This is not the best method, but it does ensure a close reading of the text.

Our target population is freshman students, mostly non-majors, who take the introductory history survey as part of a university or college distribution requirement. Some second- and third-year students appear in the course also. We plan to make the lessons available to general computer system users on an "as needed" basis in future, but we do not anticipate high demand in that area. Currently CLIOTUTOR serves sections of freshman history taught by two faculty, but it is hoped that other faculty will utilize the program as it becomes more familiar within the department. To encourage other faculty to use CLIOTUTOR , Porter and Stone have demonstrated the program at faculty meetings and are installing a terminal in the department area for easy access by interested persons.

The program requires about 10 hours to set up at the begining of each semester and about two hours a week of administrative oversight during the semester. Although faculty negotiate the computer arrangments with appropriate university units and personnel, a graduate assistant can do most of the day-to-day oversight.

In a letter of support for Rhode Island's application to F.I.P.S.E. for an evaluation project, Western Michigan University officials calculated expenses of its own use of CLIOTUTOR as follows: $28,000 for five VAX VT 340 terminals reserved for CLIOTUTOR users; $12,000 in estimated student computer connect time, $8,200 in computer processing time, and at least one full-time equated faculty position. For 1989-90 the History Department has allocated ten hours per week of graduate assistant help to the CLIOTUTOR-associated history courses.

RESULTS

A formal evaulaton of computer-assisted instruction, specifically focussed on CLIOTUTOR, is now under way by the originators of CLIOTUTOR at Rhode Island College ["Evaluating a Computer-Based Curriculum for the Introductory Western History Survey", F.I.P.S.E. project proposal # 1595]. Informal surveys of students were taken in 1988 and 1989 by instructors in the course using a simple check-box survey form, with space for comments. Faculty also interviewed a focus group of students who took both semesters of the course, and observed students at work at the computer terminals. Individual comments, observations and survey results have been consistent on major results.

A large majority (over 80%) of students said they enjoyed working with CLIOTUTOR lessons and felt they were effective in helping them learn text material. A small number of students who did poorly otherwise in the course said the lessons were boring; an equal number of bright students said they were trivial and a waste of time. The lessons seem most helpful to plodding students whose reading skills were challenged by the text. Many students pursued the lessons with text open and notebook in hand, using the text and the computer to compliment each other. Many students repeated the lessons as a review for tests.

The student's major complaint about CLIOTUTOR was the inconvenience of using the five VAX terminals reserved for CLIOTUTOR in the computer laboratory. The possibility of providing CLIOTUTOR on diskettes for use in personal microcomputers must be weighed against the fact that, with a mainframe delivery system, faculty can monitor student performance and communicate with students via the system mail service. CLIOTUTOR provides faculty with records of student performance that help identify problem areas without penalizing individuals.

To develop writing skills and support mastery of the text, we require a one-page summary of each chapter in the text. Each summary is graded, with marginal comments by faculty, and improvement is expected during the course of the semester. This assignment is considered difficult and onerous by the students but a surprising majority say it is the single most effective requirement of the course.

CLIOTUTOR includes a few puzzles and games as well as illustrations of historical situations using fictitious characters. Faculty designed similar exercises for classroom participation by students, usually in small groups, and usually involving a one-page essay writing assignment. These exercises force students to consult their texts yet again and synthesize material from different areas to answer specific questions. We also ask them to respond to fictitious but representative characters and situations. Such classroom activities get mixed reviews from students. In general, the use of CLIOTUTOR has allowed us to experiment with a variety of classroom methods, the effectiveness of which is still problematical.

CONCLUSIONS AND RECOMMENDATIONS

Based on evaluations so far we must conclude that the CLIOTUTOR program is very effective in shifting the focus of classroom activity from digesting text material to challenging the student at higher levels of cognitive process. It is also effective in engaging a large number of students on a "personal" level in a way no single teacher could ever do. Finally, despite the intiial institutional costs of participating in the CLIOTUTOR program, the benefits for instruction in current and future years are clearly sufficient to keep the program going.

Any college or university with a VAX mainframe computer can replicate the CLIOTUTOR program. Adapting the Western Michigan course methods to freshman history is also possible. However, both the computer program and the methods of teaching used at Western Michigan assume a commitment on the part of faculty to design a student-centered classroom where text-centered lecturing is held to a minimum.